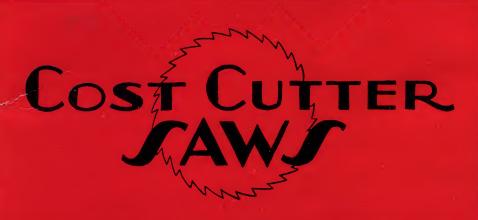
**INSTRUCTION BOOK** 



PARTS CATALOG





#### C. B. NELSON COMPANY

Designers and Manufacturers of Special Machinery

508-514 SOUTH KOLMAR AVENUE • CHICAGO 24, ILLINOIS



#### **FORE WORD**

The purpose of this booklet is to supply users of COST CUTTER SAWS with simple, plain, understandable instructions concerning their care and operation. It is assumed those purchasing a saw-trimmer understand the uses to which it can be put; such as sawing and trimming slugs, rule and border, mitering, cut sawing and mortising. In view of this, no attempt has been made to go into these operations at length, but rather to instruct in the general care and operation of the machines. So far as space permits, all important details of COST CUTTER SAWS are explained, necessary adjustments treated and methods for taking up play and wear shown. If anything is not clear, or any special information is desired, the manufacturers will gladly supply it.

While a saw-trimmer is relatively a simple machine it must be built and adjusted to high mechanical standards. Skilled workmen, competent supervision, and the latest in machine equipment insure a mechanically perfect saw-trimmer, however, the buyer must realize that after a COST CUTTER SAW leaves the factory its future performance depends entirely upon the operator and the care and attention he gives to it.

While it is customary for several to have access to and use a saw-trimmer, it is usually best to make some single individual responsible for its adjustment, lubrication and general care. It is for this individual a booklet of this kind is primarily intended.

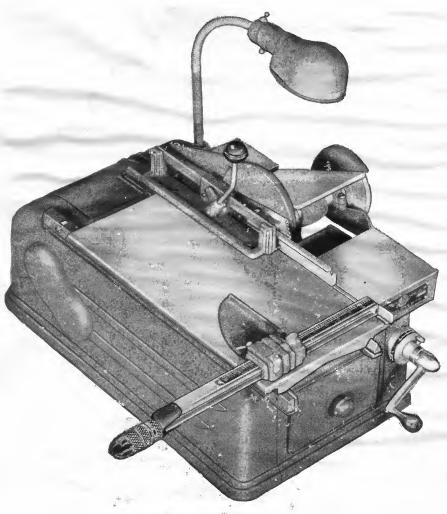
The instructions contained in this booklet cover the A, B, and C Model COST CUTTER SAWS. The general construction of the three Models conform to the same high mechanical standards, the only difference being that the Model A does not have the saw elevating features of the B and C Models.

COST CUTTER SAWS are the last word in saw-trimmer design and construction. They embody all worth-while saw-trimmer improvements to be found in other machines as well as numerous special features of their own. Used on work for which they are intended, no saw-trimmers ever designed are more simple, rapid, accurate, or safe, and none will do their work better or quicker. If the instructions given in this booklet are intelligently carried out, success is assured, and the COST CUTTER SAW will be found a highly accurate and profitable tool.

All COST CUTTER SAWS are correctly adjusted in all their parts and tested under power before leaving the factory. So far as humanly possible they are right. Remember, we are extremely interested in having this machine give you complete satisfaction at all times; if there is any explanation or information that you may desire, please feel free to call upon us at any time.

Page One

## MODEL C Cost Cutter Saw



(PLATE 2)

# MODEL B Cost Cutter Saw



(Plate 3)

# MODEL A Cost Cutter Saw (SHOWN WITH UTILITY CABINET)



(Plate 4)

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#### Safety First

Remember, saw-trimmers are designed to — and will — cut anything coming in contact with the fast revolving saw blade. Keep the saw guard down and the fingers clear of blade when saw is in operation. Turn off the power when the machine is not in use. SAFETY FIRST . . . always!

#### Keep Saw Blade Sharp

For best results, it is advisable to use special blades for cutting brass, copper, zinc, etc. ALL blades should be sent to an experienced saw sharpener for filing, grinding, swaging, or setting.

#### Keep Trimmer Knives Sharp and Properly Set

See instructions for sharpening and setting trimmer knives on pages 9-10 of this booklet.

#### Remove Emery Wheel When Not In Use

It is advisable to remove emery wheel when not in use for sharpening trimmer knives. This gives added accident protection, a smoother running saw arbor, and insures a true, clean wheel for sharpening knives.

#### Keep the Cost Cutter Saw Properly Oiled

Use a good grade of machine oil in the oil-holes of the elevating assembly and workholder. Oil various parts that are subject to constant friction, such as workholder clamp bar, workholder rack bar, 72 pica thread, etc. Oil roller bearings on sliding table every thirty days or so through hollow shaft of bearing. For V-track and roller track use a combination of kerosene and a very light oil, or, kerosene itself which acts as both cleansing agent and lubricant. Use a good grade of oil in wick cups of motor—do not over oil! No oiling is necessary where ball bearing type motors are supplied. Ball bearing grease every three or four years is sufficient lubrication.

#### Keep Driving Belt at Proper Tension

The tension of the V-belt should be approximately the same as when the COST CUTTER SAW is received from the factory. Due to the construction of the driving belt, little adjustment is necessary, but when it is, tighten by following instructions on page 11. Keep belt free from grease or oil.

#### The Cost Cutter Saw is a Precision Tool

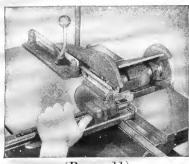
Treat it as such. Don't use strong arm methods. Make all adjustments carefully. Don't force work through the machine: jamming work suddenly forward on the saw table clogs the blade and retards production. Keep the machine clean and free from grit and rust!

#### Sliding Saw Table

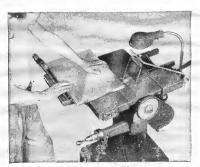
The operation of this table is largely self-explanatory. KEEP THE TRACK AND ROLLERS CLEAN, lubricating regularly with a light oil and kerosene, as outlined on preceding page. DO NOT TAMPER WITH ROLLER BEARINGS. They are set correctly at the factory and any deviation will result in taper-cut slugs. The roller bearings and V-track are adjustable and replaceable, but this should not be necessary for many years, if ever. When adjustment is necessary, call an experienced machinist or write to us for advice.

#### Sawing and Trimming Position (Plate 11)

On the Model A saw, the saw arbor is fixed and no attention need be paid to the matter. In sawing and trimming on the B and C Models, best results are obtained if the head is raised to its highest point by means of the elevating handle. When raising head to its highest point, always relieve strain on elevating screw by reversing about ½ turn on the elevating handle.



(Plate 11)



(PLATE 13)

#### Sawing Stereos and Large Plates (Plate 13)

In cutting zinc, brass, copper or wood, trimmer knives should not be used; lower saw head until trimmers clear. For large plates, stereo's, or wood, the saw blade guard can be swung back (plate 13), and the workholder detached. The emery wheel and emery wheel guard can also be removed if further clearance is necessary.

#### **Elevating Mechanism**

The Elevating Mechanism of the B and C Model Cost Cutter Saws is of simple construction, requiring no adjustments. On both Models, points are shown on the Elevating Point Collar which is situated on the elevating shaft and can be set as desired. IMPORTANT: when elevating saw arbor to trimming position, or when saw arbor reaches highest point, always relieve strain of Elevating Screw by reversing upward movement about ½ turn.

#### Saw Arbor or Housing (Plate 19)

The saw arbor is so constructed that the entire unit can be removed by loosening two set screws (one on the Model B). However, this should rarely — if ever — be done, for the arbor is equipped with New Departure oil-sealed bearings which never require oiling or adjustment.



(PLATE 19)

#### Saw Blade and Trimmer Head

To remove Saw Blade and Trimmer Head as one piece, remove table stop and slide table clear of saw blade; insert Pin Wrench in hole (A) in Trimmer Head and holding belt firmly in right hand, or, holding pulley fast by placing second Pin Wrench in hole (B), turn Trimmer Head forward (left hand thread). In changing blades, it is not necessary to remove trimmer head, simply loosen three saw blade screws. Upon replacing blade, tighten screws a little at a time, gradually working from one to the other so that the blade aligns properly. CAUTION: Always make certain face of trimmer head and corresponding face of saw blade are free from grit and dirt.

#### Adjusting Trimmer Knives

Loosen all three Trimmer Knife Locking Screws with "T" wrench and loosen Trimmer Knife Adjusting Disc (C Plate 19). Push Trimmer Knives against Adjusting Disc and tighten locking screws (D Plate 19) slightly so that knives can be pushed forward by turning adjusting disc. Turn Adjusting Disc forward until Knives extend about ½ point to 1 point beyond cutting edge of blade. Tighten adjusting disc. Tighten Trimmer Locking Screws. MAKE SURE THAT TRIMMER KNIVES CLEAR EDGE OF SLIDING SAW TABLE.

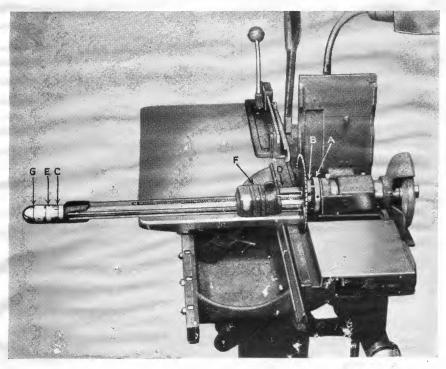
#### **Inserting Trimmer Knives**

Turn flat faces so that Trimmer Knife Locking Screws bear on them and insert in sockets against the Trimmer Knife Adjusting Disc. (C) Lock with "T" Wrench. BE SURE TRIMMER KNIVES ARE FIRMLY LOCKED BEFORE STARTING SAW.

Page Eight

#### Setting Trimmer Knives and Point Adjustment (Plate 21)

Take a piece of metal furniture (D) of known length and set End Gauge (F) to correspond—if furniture is ten picas End Gauge should be set at ten picas. Loosen screw and set Point Adjustment Collar (C) at zero. Move sliding saw table until furniture comes into trimming position (plate 21). Turn saw by hand to see that all three knives contact properly, if not ,advance Adjusting Disc (A) until knives just graze

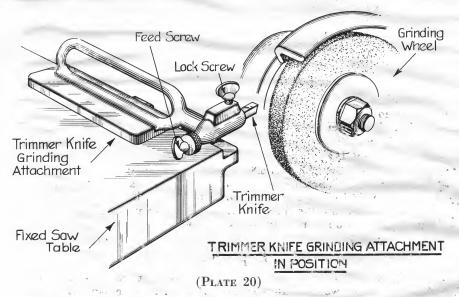


(PLATE 21)

furniture. Tighten set screw in adjusting disc. Tighten all three Trimmer Knife Locking Screws (B). If the above instructions are correctly and carefully carried out, the trimmer knives will be properly set, If it is found by testing, however, that the trimmed slug is a few thousandths long or short, the variation can be corrected by POINT ADJUSTMENT. Loosen Set Collar (E) with "T" wrench (Point Collar C is already set to zero from previous operation). Turn Knob (G) right or left until proper adjustment is obtained. Tighten Set Collar (E). ALWAYS readjust this setting after each sharpening of saw blade or trimmers to retain absolute accuracy.

#### Trimmer Knife Grinding (Plate 20)

Put Trimmer Knife in Trimmer Grinding Attachment, flat side up; tighten enough to prevent knife from turning, but still allowing it to slide. Place Trimmer Grinder in position with flange over table edge as shown Plate 20. Feed Trimmer Knife to grinding wheel slowly by turning Feed Screw, meanwhile sliding Grinding Attachment from side to side, keeping it flat against table edge, until knife is properly ground. If grinding of first Trimmer is satisfactory, tighten knurled Lock Nut in front of Feed Screw to preserve adjustment. Using the same adjustment, grind remaining trimmer knives, tightening Top Lock Screw to prevent trimmers from turning. All Trimmer Knives will then be of equal length and proper cutting angle. WHEN GRINDING TRIMMER KNIVES, ALWAYS HOLD HAND IN HANDLE OF TRIMMER GRINDING ATTACHMENT TO PREVENT HAND FROM CON-SAW BLADE. REMOVE GRINDING TACTING REVOLVING WHEEL WHEN NOT IN USE.



#### Workholder

Pull handle forward sliding clamp bar in grooved table top until coming in contact with work. Pull handle down; ratchet automatically engages and compensating spring adjusts itself to proper tension for holding work firmly. To unlock, push handle back—DO NOT LET FLY BACK. To remove Workholder, remove two screws that hold it to table. To replace, place clamp bar in table slot and slide back until holes align: insert screws and tighten. If Clamp Bar does not slide freely in table slot, loosen screws and realign. Apply light oil to table slot and clamp bar where subject to friction. Oil all moving parts of Workholder.

#### **Extension Foot**

The Extension Foot is attached to the Workholder Clamp Bar and prevents slug fanning. To remove when mitering, loosen Allen Cap Screw and withdraw Foot from two guide pins. The Extension Foot shown on page 18 is far superior to former methods of overcoming fanning. To install upon units prior to 1950, it will be necessary to send Workholder and End Gauge (ST-13X) to factory for remachining.

#### **Cutting Short Lines**

The clamp bar of the workholder is machined to a thickness of .093 which permits cutting to about 11 points—the thickness of the clamp bar plus the distance the trimmers and saw housing are set from the edge of the sliding table. To cut smaller the slug must be backed up by another slug of known length and the same thickness, or, by using three slugs to make a three-cornered box for holding the short line. Where short lines are consistently cut, a thinner clamp bar can be provided that will allow cutting to 6 points without backing up or boxing. The thinner bar, however, will not wear as well as the regulation bar and is not recommended for every-day use.

#### Belt Tightening

The V-belt on Cost Cutter Saws should be kept at approximately the same tension as when machines are received from factory. A V-belt should not be tightened to same degree as a flat belt because of its wedge grip. It should always be loose enough to put on by hand—NEVER ADJUST SO TIGHT THAT IT IS NECESSARY TO USE AN INSTRUMENT FOR LEVERAGE WHEN INSTALLING. If tightened too much, undue strain will shorten life of motor. On the A and C Models, the belt is tightened by loosening the motor bracket bolt. On the Model B, loosen the screw on the inner motor rail bracket, and slide entire assembly until proper adjustment is attained.

#### Belt Replacement

To change belts on the Model A saw, withdraw belt from motor pulley and remove front waste chute casting (AC-38); remove saw arbor support bolt (¼ in. Ailen Cap Screw) and lower saw arbor about half-way so that belt can be drawn over motor support bracket; loosen two ¼ in. Allen Set Screws and slide housing toward table until belt clears guard and can be withdrawn from drive pulley. Remove table stop and advance sliding saw table until clear of saw blade so that belt can be pulled over saw head and clear of saw.

To change belts on the Model C saw, lower saw arbor by means of elevating handle until enough clearance is obtained to slide belt over motor support bracket. Changing belts on the Model B saw is simple and obvious and requires no explanation.

#### Mitering -Extra Equipment

The Automatic Mitering Device is designed for right angle (90°) mitering and cuts at a 45° angle

1-Cut Rule or slugs to disired length; slide end gauge to left, out of the way.

2-Attach Mitering Device by inserting Knurled Head Screw (A) in hole provided for it in Pica Gauge Bar and tightening.

3—Pull Table forward until Device is clear of fixed right-hand table (Plate 5).

4—Swing Miter Gauge (B) to right, loosen Miter Gauge Rod (C) and pull out as far as it will go.

5-Remove Extension Foot and Attach Upper Miter Block (D) to Clamp Bar of Workholder (E).

6—Insert one rule or slug in angle of Mitering Attachment as shown (Plate 6).

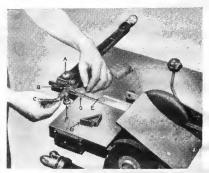
7—Slide Miter Gauge Rod (C) in toward work until it just touches the edge of slug and tighten Miter Gauge Lock Screw (F).

8—Insert rest of slugs (of same body width) in angle of Mitering Attachment, aligning them against Miter Gauge.

9—Clamp them in position with Workholder (Plate 7).

10—Swing Liter Gauge Bracket back so that it rests on Miter Head (Plate 8).

THIS IS IMPORTANT, or Lock Screw (F) will strike fixed table. Work is now ready to be mitered.



(PLATE 5)



(PLATE 7)



PLATE 6)

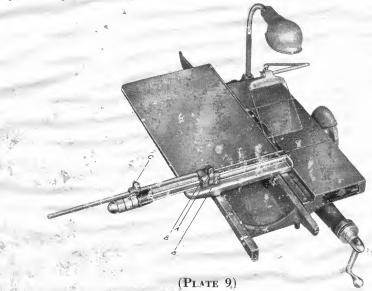


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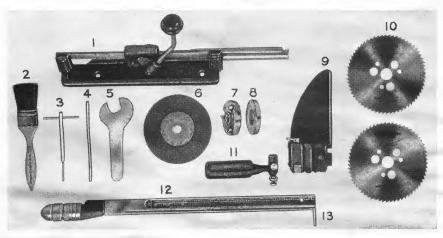
NOTE: After each sharpening of saw blade or trimmer knives, Mitering Attachment must be adjusted to new setting for continued accuracy. Loosen Miter Slide Adjusting Screw (H) and turn Cam Screw (J) to right or left necessary distance. To be sure that setting of Mitering Attachment is accurate, after each adjustment miter a rule or slug and examine it. If the angle is short, Miter Slide Cam Screw must be turned to right; if angle is cut too deep, turn to the left. Make certain Miter Slide Adjustment Screw is tight before resuming work.

#### Extension Gauge - Extra Equipment (Plate 9)

For cutting over 72 picas, remove standard end gauge and attach extension gauge by means of Thumb Release (A). If work is to be cut to 100 picas, run clamping end of Extension Gauge to 50 pica marker of standard gauge bar and move Extension Gauge Foot (C) to 50 pica marker of Extension Gauge. To cut 150 picas, move Extension Gauge Foot to 100 pica marker of Extension Gauge. If setting of Extension Gauge deviates from absolute accuracy, use a rule of known length to measure distance between edge of trimmer knives and Extension Gauge Foot. The deviation can then be taken up by adjusting the two compensating Screws (B). If Gauge is to be advanced to the left, loosen left hand screw to distance required, and tighten right hand screw to take up play. To adjust Gauge to the right, reverse the procedure.



Transparent Saw Guard - Extra Equipment (Plate 9)
This unit is of particular value in work where the eyes are brought close to the saw blade, and in cutting large plates where regular guard is swung back for clearance. It can be moved to any position and is attached to saw by inserting swivel nut in threaded hole to left of light fixture.



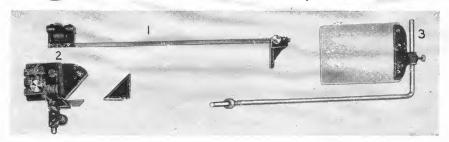
(PLATE 22)

#### Standard Equipment (All Models)

- 1-Workholder
- Brush
- 3—"T" Wrench
- 4—Pin Wrench (2)
- 5—Emery Wheel Nut Wrench 6—Emery Wheel
- 7—Trimmer Head with Knives (3) and Screws.
- 8—Trimmer Adjusting Disc
- 9—End Gauge
- 70—Standard 6" Saw Blade (2)
- 11—Trimmer Grinder
- 12-72 Pica Gauge Bar
- 13—Thumb Guard

### Extra Equipment 1—100 Pica Extension Gauge

- 2-Automatic Mitering Attachment and Upper Miter Block
- 3—Transparent Saw Guard
- 4—Utility Cabinet



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(PLATE 23)

#### Parts List

The following Parts List covers all Cost Cutter Saws built after January 1st, 1947. Although revisions in construction and design are made from time to time, their adaptability to older units is always kept in mind. To enable us to make the adjustments necessary to adapt latest equipment to your machine, ALWAYS INCLUDE MODEL AND SERIAL NUMBER OF SAW WHEN ORDERING PARTS.

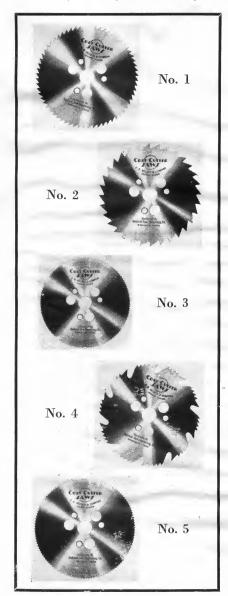
KEY TO PARTS LIST: the prefix A, B, C, AC, or ST indicates the Model of the saw. For example, No. AC-245 (Housing) will fit either A or C Model: No. B-245 (Housing) will fit only the Model B. ST indicates a standard part: thus, ST-244 (trimmer head) is interchangeable on all three Models.

#### Miscellaneous Parts

Standard Saw Blade. NO-1: Stereotype Saw Blade. NO-2: Brass Saw Blade. NO-3: Wood Saw Blade. NO-4: Zinc Saw Blade. NO-5: Pin Wrench for Trimmer Adjustment Disc and Drive Pulley. ST-253: Emery Wheel Nut Wrench. ST-254: "T" Wrench for locking Trimmers and misc. uses. ST-255: ST-256: Brush Starting Switch. ST-149: ST-128X: Flexible Light Fixture complete. ST-139X: Transparent Saw Guard and Fitting complete. Transparent Plexiglass Insert. ST-140: AC-93: V-Belt. B-93: V-Belt Trimmer Grinder complete AC-80: Trimmer Grinder complete B-150: Trimmer Knife Locking Screw. ST-81: Trimmer Knife Adjusting Screw. ST-82: Trimmer Knife Adjusting Screw Lock Nut. ST-83: Aluminum Saw Guard. A-124: Al. Saw Guard C-49: Al. Saw Guard B-20: Emery Wheel Guard. ST-259: ST-136X: Extension Gauge complete. Mitering Attachment complete. ST-77X: Upper Miter Block. ST-94: Waste Truck. B-4: Waste Truck Wheels. B-4A: Elevating Handle. BC-21: Steel Miter Gears (2) and Taper Pins. B-95:

#### Saw Blades

Cost Cutter Saw Blades are of the finest material and workmanship obtainable. For highest efficiency and economy, it is recommended that they be used at all times. Cost Cutter Blades also fit Amsco, ATF, C & G, Hildman, Miller, Nolan Star, Pioneer-Toledo, and Turner machines.



No. 1 STANDARD SAW BLADE: 6 in. diameter, 64 swaged teeth, center hole  $\frac{7}{8}$  in. For cutting Linotype, Intertype and Ludlow slugs; metal leads and rule; electrotypes and thin stereotype plates.

No. 2 STEREOTYPE SAW BLADE:6 in. diameter, 32 swaged teeth, center hole  $\frac{7}{8}$  in. Especially designed for typhi stereo's. Can be used equally as well on leads, slugs and rule.

No. 3 BRASS SAW BLADE:  $5\frac{1}{2}$ " diameter, 102 teeth, center hole  $\frac{7}{8}$ ". Not swaged or set, taper ground from rim to center hole. For brass rule and leads. Can also be used for copper half tones and zinc plates.

No. 4 WOOD SAW BLADE: 6" diameter, 50 teeth not swaged or set, center hole 7/8". Hollow ground for clearance. Designed for Electrotypers and engravers, this blade will cut unmounted wood base, wood furniture, reglets and rubber stamp mountings leaving a smooth unsplintered finish. Not to be used for metal cutting.

No. 5 ZINC SAW BLADE: 6" diameter, 120 set teeth, center hole \( \frac{1}{8} \)". For cutting mounted and unmounted zinc; also electrotypes and copper halftones.

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When ordering repair parts give both number and name of part, also model and serial number of saw.

#### Saw Head Assembly

ST-240X: Saw Head Assembly Complete. ST-240: Drive Pulley and Taper Pin.

ST-241: Dust Cap.

ST-242: Trimmer Adjusting Disc.

ST-242A: Trimmer Adjusting Disc Brass Pin and Lock Screw.

ST-243: Bearing Retainer. ST-244: Trimmer Head.

ST-244A: Trimmer Knives (set of three).

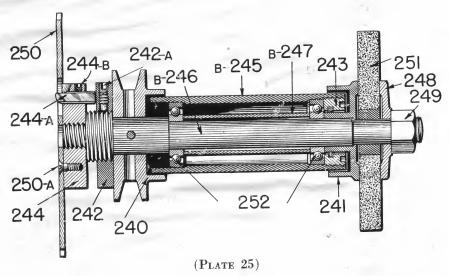
ST-244B: Trimmer Knife Set Screws (set of three)

B-245: Saw Housing.
AC-245: Saw Housing.
B-246: Arbor Shaft.
AC-246: Arbor Shaft.
B-247: Bearing Spacer.
AC-247: Bearing Spacer.

ST-248: Emery Wheel Flange. ST-249: Emery Wheel Nut. ST-250: Saw Blade, Standard 6".

ST-250A: Saw Blade Screws (set of three). ST-251: Emery Wheel ½ x 5": 5%" Hole.

ST-252: Ball Bearings (set of two). New-Departure Oil-less.



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When ordering repair parts give both number and name of part, also model and serial number of saw.

#### Workholder Assembly

ST-61X: Workholder Assembly Complete.

ST-61: Workholder Bracket.

ST-61A: Workholder Bracket Table Screws (two).

ST-62: Slide Casting.

ST-63: Trip Lever Casting and Pin (No. 76B).

ST-64: Bar Clamp. ST-65: Rack Bar.

Rack Bar Screws (two). ST-65A: ST-67: Lock Cam and Pin (No. 66).

ST-67A: Lock Cam Ball and Spring (No. 67B).

ST-68: Rack Bar Plunger and Stop Pin (No. 68B).

ST-68A: Rack Bar Plunger Spring. ST-68B: Rack Bar Plunger Stop Pin

ST-70: Clevis Block Stud.

ST-71: Rack Bar Plunger Screw. ST-72: Lock Cam Set Screw.

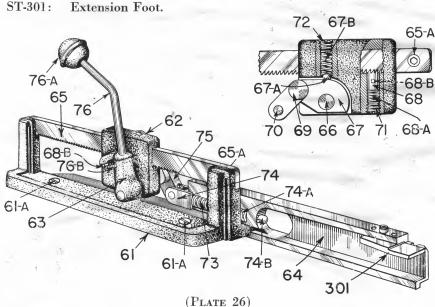
ST-73: Clevis Block Pin and Stop Pin (No. 74B).

ST-74: Clevis Block.

ST-74A: Clevis Block Pin Spring. ST-75: Clevis Link and Stud (No. 69)

ST-76: Workholder Handle.

ST-76A: Workholder Handle Knob.



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When ordering repair parts give both number and name of part, also model and serial unmber of saw.

#### Gauge Bar Assembly

Gauge Bar Assembly Complete. **ST-5X**:

ST-5: Gauge Bar Housing.

ST-5A: Gauge Bar Housing Set Screws (2).

ST-6: Gauge Bar 72 Pica.

ST-6A: Gauge Bar Dowel Pins (2).

ST-6B: Gauge Bar Screw. ST-7: Gauge Bar Knob. ST-7A: Gauge Bar Knob Pin.

ST-8: Thumb Guard and Lock Screw.

ST-9: Point Adjustment Collar. ST-9A: Point-Collar Set Screw.

ST-9B: Point-Collar Ball and Spring (No. 9C).

ST-9D: Point-Collar Screw.

ST-10: Set Collar.

Set Collar Set Screw. ST-10A: ST-33: 72 Pica Worm Screw. ST-33A: 72 Pica Worm Screw Pin. 72 Pica Brass Scale. ST-33B:

#### **End Gauge Assembly**

End Gauge Assembly Complete. ST-13X:

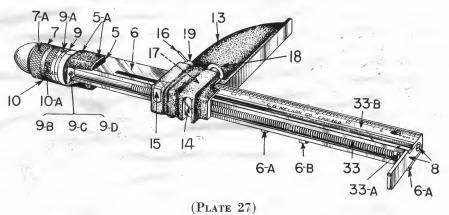
ST-13: End Gauge.

ST-14: End Gauge Thread Nut. ST-15: End Gauge Lock Nut.

ST-17: End Gauge Thread Nut Spring.

ST-18: End Gauge Push Button.

ST-19: End Gauge Lock Nut Screw and Pin (No. ST-16).



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